

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 27 (Canceled).

28. (Previously presented) A twin-wire former for producing a fibrous web from a fibrous stock suspension, comprising:

two endless wire belts arranged to form a twin-wire zone having at least a first and second section;

a first dewatering element located in said first section, in which said two endless wire belts are arranged to run over at least a portion of said first dewatering element, and said two endless wire belts are further arranged to form a wedge-like inlet gap;

a flowbox arranged obliquely to a horizontal reference to supply a fibrous stock suspension to said inlet gap;

a second dewatering element located in said second section, in which said two endless wire belts, and the forming fibrous web located between said two endless wire belts, are arranged to run obliquely downward, relative to a vertical reference, over said second dewatering element;

a first deflection device located at an end of said second section, in which said two endless wire belts are arranged to run over a lower vertex of said first deflection device;

at least one separating device structured and arranged to act over an entire machine width and located in a region at which a first of two endless wire belts is led away from a second endless wire belt carrying the forming fibrous web; and

a second deflection device located after said separating device, relative to a belt travel direction, arranged to deflect said second endless wire carrying the forming fibrous web over an upper vertex of said second deflection device,

wherein, after said first deflection device, said two endless wire belts are arranged to run upward at an angle to the horizontal reference such that said upper vertex is located above said lower vertex, and, after said second deflection device, said second endless wire carrying the forming web is arranged to run downward at an angle to the horizontal reference.

29. (Previously presented) The twin-wire former in accordance with claim 28, wherein said upper vertex is located at least 50 mm above said lower vertex.

30. (Previously presented) The twin-wire former in accordance with claim 29, wherein said upper vertex is located at least 100 mm above said lower vertex.

31. (Previously presented) The twin-wire former in accordance with claim 29, wherein said upper vertex is located at least 200 mm above said lower vertex.

32. (Previously presented) The twin-wire former in accordance with claim 28, wherein the angle of the downward run after said second deflection device is between 0° and

45°.

33. (Previously presented) The twin-wire former in accordance with claim 32, wherein the angle of the downward run after said second deflection device is between 0° and 30°.

34. (Previously presented) The twin-wire former in accordance with claim 28, wherein the fibrous web comprises at one of a paper, board, or tissue web.

35. (Previously presented) The twin-wire former in accordance with claim 28, wherein said first dewatering device comprises a rotating forming roll.

36. (Previously presented) The twin-wire former in accordance with claim 35, wherein said forming roll has a diameter greater than 1200 mm.

37. (Previously presented) The twin-wire former in accordance with claim 36, wherein said diameter of said forming roll is greater than 1635 mm.

38. (Previously presented) The twin-wire former in accordance with claim 36, wherein said diameter of said forming roll is greater than 1760 mm.

39. (Previously presented) The twin-wire former in accordance with claim 35, wherein said forming roll has a dewatering capacity of at least 50% of a total dewatering capacity of said twin-wire former.

40. (Previously presented) The twin-wire former in accordance with claim 39, wherein the dewatering capacity of said forming roll is at least 65% of the total dewatering

capacity of said twin-wire former.

41. (Previously presented) The twin-wire former in accordance with claim 35, wherein said forming roll comprises an open roll.

42. (Previously presented) The twin-wire former in accordance with claim 41, wherein said open forming roll is closed by one of a grill and honeycomb structure.

43. (Previously presented) The twin-wire former in accordance with claim 41, wherein said open forming roll comprises a suction roll.

44. (Previously presented) The twin-wire former in accordance with claim 28, wherein said second dewatering device comprises a plurality of dewatering elements.

45. (Previously presented) The twin-wire former in accordance with claim 28, wherein said oblique downward run of said two endless wire belts is between 10° and 60°.

46. (Previously presented) The twin-wire former in accordance with claim 28, further comprising isobaric dewatering elements positioned between said first deflection device and said separating device.

47. (Previously presented) The twin-wire former in accordance with claim 46, wherein said isobaric dewatering elements are arranged such that the two endless wire belts and the forming fibrous material between the two endless wire belts are guided between said isobaric dewatering elements.

48. (Previously presented) The twin-wire former in accordance with claim 46,

wherein at least one stationary isobaric dewatering element is arranged on either the first or second endless wire and at least one other isobaric dewatering element is arranged on the other of the first or second endless wire.

49. (Previously presented) The twin-wire former in accordance with claim 48, wherein said at least one other isobaric dewatering element can be set resiliently against the other of the first or second endless wire with a selectable force.

50. (Previously presented) The twin-wire former in accordance with claim 46, wherein said isobaric dewatering elements comprise at least one of plates and plate segments.

51. (Previously presented) The twin-wire former in accordance with claim 28, further comprising at least one flat suction element, positioned after said separating device, that is structured and arranged to act on said second endless wire carrying the forming fibrous web.

52. (Previously presented) The twin-wire former in accordance with claim 28, wherein said angle of the downward run of said second endless wire carrying the forming web is less than 60°.

53. (Previously presented) The twin-wire former in accordance with claim 52, wherein said angle of the downward run of said second endless wire carrying the forming web is less than 40°.

54. (Previously presented) The twin-wire former in accordance with claim 52,

wherein said angle of the downward run of said second endless wire carrying the forming web is less than 25°.

55. (Previously presented) A twin-wire former for producing a fibrous web from a fibrous stock suspension, comprising:

two endless wire belts arranged to form a twin-wire zone having at least a first and second section;

a first dewatering element located in said first section, in which said two endless wire belts are arranged to run over at least a portion of said first dewatering element, and said two endless wire belts are further arranged to form a wedge-like inlet gap;

a flowbox arranged obliquely to a horizontal reference to supply a fibrous stock suspension to said inlet gap;

a second dewatering element located in said second section, in which said two endless wire belts, and the forming fibrous web located between said two endless wire belts, are arranged to run obliquely downward, relative to a vertical reference, over said second dewatering element;

a first deflection device located at an end of said second section, in which said two endless wire belts are arranged to run over a lower vertex of said first deflection device;

at least one separating device structured and arranged to act over an entire machine width and located in a region at which a first of two endless wire belts is led away from a

second endless wire belt carrying the forming fibrous web; and

a second deflection device located after said separating device, relative to a belt travel direction, arranged to deflect said second endless wire carrying the forming fibrous web over an upper vertex of said second deflection device,

wherein, after said first deflection device, said two endless wire belts are arranged to run upward at an angle to the horizontal reference such that said upper vertex is located above said lower vertex, and, after said second deflection device, said second endless wire, which is arranged to carry the forming web, is substantially horizontally guided.

56. (Canceled).

57. (Previously presented) The twin-wire former in accordance with claim 55, wherein said second endless wire runs at least 50 mm above said lower vertex.

58. (Previously presented) The twin-wire former in accordance with claim 57, wherein said second endless wire runs at least 100 mm above said lower vertex.

59. (Currently amended) A The twin-wire former in accordance with claim 28, further comprising for producing a fibrous web from a fibrous stock suspension, comprising: two endless wire belts arranged to form a twin-wire zone having at least a first and second section;

a first dewatering element located in said first section, in which said two endless wire belts are arranged to run over at least a portion of said first dewatering element, and said two

endless wire belts are further arranged to form a wedge-like inlet gap;

a flowbox arranged obliquely to a horizontal reference to supply a fibrous stock suspension to said inlet gap;

a second dewatering element located in said second section, in which said two endless wire belts, and the forming fibrous web located between said two endless wire belts, are arranged to run obliquely downward, relative to a vertical reference, over said second dewatering element;

a first deflection device located at an end of said second section, in which said two endless wire belts are arranged to run over a lower vertex of said first deflection device;

at least one separating device structured and arranged to act over an entire machine width and located in a region at which a first of two endless wire belts is led away from a second endless wire belt carrying the forming fibrous web;

a second deflection device located after said separating device, relative to a belt travel direction, arranged to deflect said second endless wire carrying the forming fibrous web over an upper vertex of said second deflection device,

wherein, after said first deflection device, said two endless wire belts are arranged to run upward at an angle to the horizontal reference such that said upper vertex is located above said lower vertex, and, after said second deflection device, said second endless wire carrying the forming web is arranged to run downward at an angle to the horizontal

reference; and

a sheet forming device is arranged after said second deflection device relative to said belt travel direction.

60. (Previously presented) The twin-wire former in accordance with claim 59, wherein said sheet forming device comprises a hybrid former.

61. (Previously presented) The twin-wire former in accordance with claim 28, wherein said second deflection device comprises one of a suction roll, a shoe with foils, and a shoe with foils with an applied vacuum.

62. (Previously presented) The twin-wire former in accordance with claim 28, wherein a distance between said lower vertex and said upper vertex is between 1 and 8 m.

63. (Previously presented) The twin-wire former in accordance with claim 62, wherein said distance between said lower vertex and said upper vertex is between 3 and 6 m.

64. (Previously presented) The twin-wire former in accordance with claim 28, wherein said first deflection device comprises one of a closed roll, an open roll, and an open roll with an applied vacuum.

65. (Previously presented) The twin-wire former in accordance with claim 28, wherein said separating device comprises at least one of a suction separator and a vacuum shoe.

66. (Previously presented) The twin-wire former in accordance with claim 28,

wherein said first deflection device comprises a first deflection roll and said second deflection device comprises a second deflection roll,

wherein said first deflection roll has a roll diameter is greater than a diameter of at least one of said forming roll and said second deflection roll.

67. (Previously presented) The twin-wire former in accordance with claim 66, wherein said second deflection roll comprises a suction roll.

68. (Previously presented) The twin-wire former in accordance with claim 28, wherein an overall height of said twin-wire former is between 2 and 8 m.

69. (Previously presented) The twin-wire former in accordance with claim 68, wherein said overall height is between 3 and 6 m.

70. (Previously presented) A twin-wire former for producing a fibrous web from a fibrous stock suspension, comprising:

two endless wire belts arranged to form a twin-wire zone having at least a first and second section;

a first dewatering element located in said first section, in which said two endless wire belts are arranged to run over at least a portion of said first dewatering element, and said two endless wire belts are further arranged to form a wedge-like inlet gap;

a flowbox arranged obliquely to a horizontal reference to supply a fibrous stock suspension to said inlet gap;

a second dewatering element located in said second section, in which said two endless wire belts, and the forming fibrous web located between said two endless wire belts, are arranged to run obliquely downward, relative to a vertical reference, over said second dewatering element;

a first deflection device located at an end of said second section, in which said two endless wire belts are arranged to run over a lower vertex of said first deflection device;

at least one separating device structured and arranged to act over an entire machine width and located in a region at which a first of two endless wire belts is led away from a second endless wire belt carrying the forming fibrous web; and

a second deflection device located after said separating device, relative to a belt travel direction, arranged to deflect said second endless wire carrying the forming fibrous web over an upper vertex of said second deflection device, wherein, after said first deflection device, said two endless wire belts are arranged to run upward at an angle to the horizontal reference;

a felt arranged to remove the forming fibrous web from said second endless wire belt at a pickup point located above said lower vertex; and

a press unit arranged to follow said pickup point, relative to a belt travel direction, comprising a first and second press roll arranged to form a first press nip and third press roll arranged to form a second press nip, and a fourth press roll arranged to form a single side felted third press nip.

71. (Previously presented) The twin-wire former in accordance with claim 70, wherein said first press nip comprises a double-felted press nip, and said third press roll comprises a non-felted press roll.

72. (Previously presented) The twin-wire former in accordance with claim 71, wherein one of the felts of the double-felted press nip guide the forming fibrous web through said second press nip.

73. (Previously presented) The twin-wire former in accordance with claim 72, wherein said non-felted press roll transfers the forming fibrous web to said third press nip.

74. (Previously presented) The twin-wire former in accordance with claim 70, wherein said pickup point is located at least 50 mm above said lower vertex.

75. (Previously presented) The twin-wire former in accordance with claim 74, wherein said pickup point is located at least 100 mm above said lower vertex.

76. (Previously presented) The twin-wire former in accordance with claim 74, wherein said pickup point is located at least 200 mm above said lower vertex.

77. (Previously presented) The twin-wire former in accordance with claim 70, wherein said angle of the upward run of said two endless wire belts after said first deflection device is between 10° and 90°.

78. (Previously presented) The twin-wire former in accordance with claim 70, wherein said angle of the upward run is between 25° and 40°.

79. (Previously presented) The twin-wire former in accordance with claim 70, wherein the fibrous web comprises at one of a paper, board, or tissue web.

80. (Previously presented) The twin-wire former in accordance with claim 70, wherein said first dewatering device comprises a rotating forming roll.

81. (Previously presented) The twin-wire former in accordance with claim 70, wherein said second dewatering device comprises a plurality of dewatering elements.

82. (Previously presented) The twin-wire former in accordance with claim 70, wherein said oblique downward run of said two endless wire belts is between 10° and 60°.

83. (Previously presented) A process of dewatering a web in an apparatus that includes two endless wire belts arranged to form a twin-wire zone having at least a first and second section, a first dewatering element located in the first section and the two endless wire belts being arranged to form a wedge-like inlet gap, a flowbox arranged obliquely to a horizontal reference in a vicinity of the inlet gap, a second dewatering element located in the second section, a first deflection device, located at an end of the second section, having a lower vertex, at least one separating device structured and arranged to act over an entire machine width, and a second deflection device located after the separating device, relative to a belt travel direction, said process comprising:

supplying a fibrous stock suspension into the inlet gap, whereby a forming fibrous web is located between the two endless wire belts;

guiding the forming fibrous web and the two endless wires over at least a portion of the first dewatering element;

guiding the forming fibrous web and the two endless wire belts obliquely downward, relative to a vertical reference, over the second dewatering element;

guiding the forming fibrous web and the two endless wire belts over the lower vertex of the first deflection device;

after the first deflection device, guiding the two endless wire belts to run upward at an angle to the horizontal reference, such that the lower vertex of the first deflection device is located below the upper vertex of the second deflection device;

separating a first of the two endless wire belts from a second endless wire belt carrying the forming fibrous web in a region of the separating device;

guiding the second endless wire belt carrying the forming fibrous web over the second deflection device; and

after the second deflection device, guiding the second endless wire carrying the forming web to run downward at an angle to the horizontal reference.

84. (Previously presented) A process of dewatering a web in an apparatus that includes two endless wire belts arranged to form a twin-wire zone having at least a first and second section, a first dewatering element located in the first section and the two endless wire belts being arranged to form a wedge-like inlet gap, a flowbox arranged obliquely to a

horizontal reference in a vicinity of the inlet gap, a second dewatering element located in the second section, a first deflection device, located at an end of the second section, having a lower vertex, at least one separating device structured and arranged to act over an entire machine width, and a second deflection device located after the separating device, relative to a belt travel direction, said process comprising:

supplying a fibrous stock suspension into the inlet gap, whereby a forming fibrous web is located between the two endless wire belts;

guiding the forming fibrous web and the two endless wires over at least a portion of the first dewatering element;

guiding the forming fibrous web and the two endless wire belts obliquely downward, relative to a vertical reference, over the second dewatering element;

guiding the forming fibrous web and the two endless wire belts over the lower vertex of the first deflection device;

after the first deflection device, guiding the two endless wire belts to run upward at an angle to the horizontal reference, such that the lower vertex of the first deflection device is located below the upper vertex of the second deflection device;

separating a first of the two endless wire belts from a second endless wire belt carrying the forming fibrous web in a region of the separating device;

guiding the second endless wire belt carrying the forming fibrous web over the second

deflection device; and

after the second deflection device, guiding the second endless wire carrying the forming web to run downward at an angle to the horizontal reference,

wherein the apparatus further includes a felt and a press unit, and said process further comprises:

removing the forming fibrous web from the second endless wire belt with the felt at a pickup point located above the lower vertex; and

pressing the forming fibrous web in the press unit, arranged to follow the pickup point, relative to a belt travel direction, which includes a first and second press roll arranged to form a first press nip and third press roll arranged to form a second press nip, and a fourth press roll arranged to form a single side felted third press nip.